



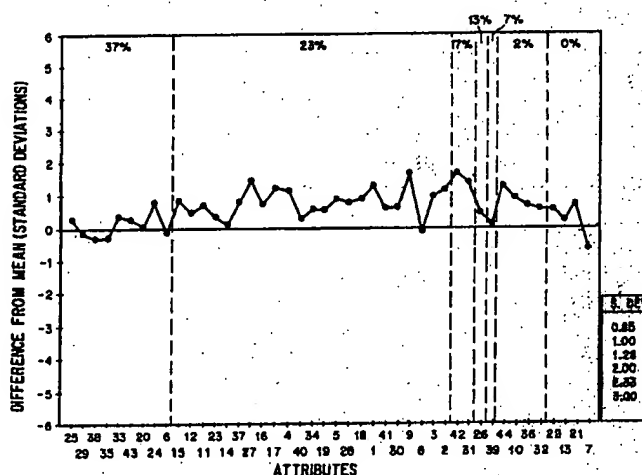
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(54) Title: A METHOD OF EVALUATING CONSUMER CHOICE THROUGH CONCEPT TESTING FOR THE MARKETING AND DEVELOPMENT OF CONSUMER PRODUCTS

(57) Abstract

A method of concept testing includes performing a multi-attribute evaluation of prompts comprising concepts and products, eliciting consumer's evaluations of the extent to which each attribute ideally should be possessed by a product, eliciting consumer's evaluations of their likelihood of purchasing the products and concepts, performing an independence factor analysis of the attributes whereby clusters of attributes are identified as factors in purchase decisions, performing a squeeze analysis whereby a matrix of factors (Fig. 2) is created wherein points defining the distances between each product (A-F) and the ideal product (ID) are plotted and a rating (1-6) is assigned to each factor and to each attribute so that the distance between each product and the ideal product are re-ranked into the same order as the purchasing likelihoods, and measuring on a factors map (Fig. 3), for each prompt, the deviation of each attribute evaluation from the mean attribute evaluation for all prompts.



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A METHOD OF EVALUATING CONSUMER CHOICE
THROUGH CONCEPT TESTING FOR THE
MARKETING AND DEVELOPMENT OF CONSUMER PRODUCTS

BACKGROUND OF THE INVENTION

5 This invention relates to quantitative methods
for evaluating consumer response to a product idea prior
to the introduction to the market of an actual product
which embodies that idea and for generating
communication designed to alter consumer attitudes
10 toward existing products. These methods involve the
evaluation by consumers of product concepts having
certain rational benefits, such as "a detergent that
removes stains but is gentle on fabrics," or non-
rational benefits, such as "a shampoo that lets you be
15 yourself." Such methods are commonly referred to as
concept testing and have been performed using field
surveys, personal interviews and focus groups, in
combination with various quantitative methods, to
generate and evaluate product concepts.

20 The concept generation portions of concept
testing have been predominantly qualitative.
Advertising professionals have generally created
concepts and communications of these concepts for
evaluation by consumers, on the basis of consumer
25 surveys and other market research, or on the basis of
their own experience as to which concepts they believe
represent product ideas that are worthwhile in the
consumer market.

30 The quantitative portions of concept testing
procedures have generally been placed in three
categories: (1) concept evaluations, where concepts
representing product ideas are presented to consumers in
35 verbal or visual form and then quantitatively evaluated.

-2-

5 by consumers by indicating degrees of purchase intent,
likelihood of trial, etc., (2) positioning, which is
concept evaluation wherein concepts positioned in the
same functional product class are evaluated together and
(3) product/concept tests, where consumers first
10 evaluate a concept, then the corresponding product, and
the results are compared.

Prior to this invention, concept testing has
been inadequate as a means to identify and quantify the
criteria upon which consumer preference of one concept
15 over another was based. These methods were insufficient
to ascertain the relative importance of the factors
responsible for or governing why consumers, markets and
market segments reacted differently to concepts
presented to them in the concept tests. Without such
information, market researchers and advertisers, with
20 their expertise, could generalize, on the basis of a
concept test, as to how consumers might react to the
actual products or to variations of the tested concepts.
Communication of the concept, as embodied in a new
product, has generally been left to the creativity of
25 the advertising agency. No systematic quantitative
method was known, however, which could accurately
identify the criteria on which the consumer choices were
based and the contribution or importance of each
criterion to the purchase decision. Therefore, previous
30 concept testing methods have failed to provide market
researchers with the complete information necessary for
them to create products specifically tailored to satisfy
a consumer group balance of purchase criteria.

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SUBSTITUTE SHEET

-3-

Moreover, previous concept testing methods
5 have failed to accurately quantify the relationships
between consumer response to concepts and consumer
choice of existing products which compete in the same
consumer market. Thus, the prior methods were unable to
provide a communication of the benefits of a consumer
10 product, closely representing the tested concept, to a
degree of accuracy commensurate with that of the present
invention.

These problems of concept testing have been
15 identified in business and marketing journals. For
example, in Moore, William L., Concept Testing, journal
of Business Research 10, 279-294 (1982), a literature
survey and review of concept testing methodology, it is
pointed out that concept tests have failed to account
20 for changes between the concept tested and the
communication describing the benefits of the product
which embodies the concept. The Moore article reports
that "no amount of improvement in current concept
testing practices can remedy these problems." this is
25 reflective of the fact that none of the prior methods
provided a quantitative means for ascertaining the
relative importance of the underlying criteria of
concept choices as a means for identifying the visual
and verbal expressions of the concepts which best
30 communicate the benefits sought by the consumer. Nor
did the prior methods quantify the relationships between
concepts and existing products offered in the same
consumer market. The ability of the method of the
present invention to ameliorate or overcome the above
35 shortcomings provides substantial improvement in

-4-

communication of the concepts identified in testing and
offered to the market as a product.

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SUMMARY OF THE INVENTION

The present invention is a novel method of
consumer product concept testing which utilizes a unique
combination of qualitative methods to guide concept
generation and quantitative concept evaluation. More
specifically, the method of this invention provides a
model of consumer choice based upon multi-attribute
evaluations of both concepts and existing products
similarly positioned in the market which, when combined
with effective methods of concept generation, not only
identifies the relative appeal to consumers of
alternative products and concepts of products and the
criteria on which those choices are based, but the
relative importance of each criterion to the choice.

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The concepts to be tested are preferably
generated in accordance with a systematic, qualitative
approach. Product benefits are elicited from consumers
in qualitative interviews to determine what positive
characteristics the consumers associate with similarly
positioned products. The benefits elicited are both
rational and non-rational. The products are usually
identified by brand and are currently available for
purchase in the consumer market. The interviews are
preferably projective in that they include the
elicitation of product benefits which, to the consumer,
personify the products. The market researcher, with
this information, then guides the generation of

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35**SUBSTITUTE SHEET**

-5-

5 concepts, including verbal and visual expressions which represent the benefits which consumers associated with the similarly positioned products.

10 The key to the success of this invention resides in its ability to quantitatively identify the criteria upon which consumer choices of concepts are based and the importance of each criterion to the consumer choice. This invention recognizes that the decision of a consumer to purchase a product is, in most cases, based upon little more than 3 to 5 factors. This invention utilizes 30 to 50 attributes in multi-
15 attribute evaluation of products and concepts, which attributes are grouped, by independence factor analysis, into clusters. These clusters represent the underlying factors of the consumer purchase decision.

20 In carrying out the invention, a squeeze analysis of the attributes is performed whereby the attributes, on the basis of the attribute evaluations, and the factors, on the basis of representative attribute evaluations within each cluster, are ordered
25 in accordance with their relative contribution or importance to the purchase decision. This ordering is achieved by squeezing a multi-dimensional matrix and remeasuring the Euclidean distances thereon between points representing the evaluated products and concepts
30 and the point representing an evaluated reference product, usually the ideal. These distances are reordered to match the order of the preferences or purchase intent expressed by the consumers for the respective products and concepts.
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-6-

5 The determination of the relationships between
these Euclidean distances and evaluations of purchase
intent for existing products, as well as for concepts,
constitutes a pattern that is revealing of the
considerations upon which consumers make purchase
decisions. This connection between the criteria
underlying consumer behavior in the actual market and in
10 choosing between concepts has not previously been
achieved and leads to better targeting of product and
communication development.

15 This information thus is singularly valuable
to quantitatively identify the verbal and visual
expressions which most effectively communicate the
promises or product benefits which have been identified
as the most important criteria in consumer choice.
20 These visual and verbal communications are useful, for
example, in creating or altering a marketing strategy
for consumer products, changing or creating the images
of a consumer product through advertising and in
targeting consumer groups.

25

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a depiction of two dimensions of the
multidimensional matrix, wherein points representing
products and an ideal product have been plotted with
30 respect to two attributes.

FIG. 2 illustrates the effect upon the multi-
dimensional matrix, as depicted in FIG. 1, caused by a
squeeze analysis of the attributes.
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-7-

FIG. 3 is an example of a factors map for a
concept.

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DESCRIPTION OF THE PREFERRED METHOD
OF CARRYING OUT THE INVENTION

A multi-attribute evaluation of prompts,
comprising existing products and concepts of products
which are similarly positioned in the consumer market,
is performed using a method which will result in an
acceptable level of behavioral variance among consumers
within a product class. The method of attribute
evaluation used in this process should achieve over 70%
and, preferably, over 90% behavioral variance. This is
essential for the process to provide information
regarding patterns of decision making, based on
importance of criteria, and to successfully communicate
the benefits of products embodying the tested concepts.

20

The evaluations are limited to products and
concepts found in the same consumer category or market
based upon identity or similarity of product use. For
example, products and concepts useful in haircare may be
tested for a particular benefit such as superior
rinsability.

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In a preferred method of attribute evaluation
for use in the method of this invention, consumers are
presented with a group of related products in
qualitative, open-ended interviews and requested to
identify words or phrases which describe each product.
The creation of sample consumer groups and structuring
of interviews for this purpose are established according
to conventional statistical guidelines.

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5 The next step in performing a preferred method
of attribute evaluation is the selection of the
appropriate set of attributes to be used in the
evaluations. Using various qualitative interviewing
techniques, consumers are requested to identify (1)
rational descriptors, which describe the products in
10 terms of function or physical characteristics, and (2)
emotional descriptors, which describe the emotional
reasons which the consumers have for choosing a product
such as, for example, status, feelings of trust in the
brand, personal identification with the brand or the
communication of its benefits in advertising media, and
15 which include (i) stereotype descriptors, which
consumers use to describe the demographic traits of
users of the products and (ii) personality descriptors
which consumers use to personify brands or products.

20 The descriptors obtained in the above
enumerated three areas are usually 1000 to 2000 in
number which number is initially reduced by various
qualitative interviewing techniques, to reduce the
number of descriptors, usually to approximately 100 to
25 200, thereby enabling the subsequent application of
statistical analyses to further reduce such numbers.
These techniques preferably include so-called game
playing techniques, wherein consumers try to suggest a
given product, using attributes. The redundant
30 descriptors are eliminated from consideration as
attributes and will not be used in the quantitative
interviews.

35 The descriptors remaining after the initial

-9-

reduction are then submitted in quantitative interviews
to consumers, in association with the products, wherein
5 consumers are requested to evaluate the extent or degree
to which each descriptor presented to him is
attributable to each product presented to him in the
interview. Evaluations are obtained for all remaining
descriptors and for all products overall, although all
10 products and all descriptors preferably are not
presented to each consumer in the interviews. A
preferred method of quantitative interviewing is the
SCRIBE computer aided interview, available from Frost
International Research, whereby consumers are shown a
15 monitor listing various items and are requested to cause
a cursor or other indicator, using a hand-held control,
to move along a line visually representing a linear
scale of the degree or extent to which a descriptor
describes, is associated with or is otherwise
20 attributable to each product. The process is repeated
among a representative sample of consumers, created on
the basis of standard statistical guidelines. All data
is preferably not presented to each consumer, as pointed
out above, but each product is evaluated sufficiently
25 with respect to each descriptor so that the data is
sound and within generally accepted confidence levels.

A discriminant analysis for the set of
descriptors is performed. A discrimination index is
30 thereby formed wherein each descriptor is assigned a
value which represents the extent to which that
descriptor discriminates between products among all of
the consumers interviewed. The evaluated descriptors
are then ordered according to their respective ranks in
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SUBSTITUTE SHEET

-10-

5 the discrimination index. The final set of attributes to be used in the final quantitative interviews are chosen from the descriptors on the bases of rank in the discrimination index and ability to provide the greatest degree of behavioral variance and usually number between 30 and 50.

10 The final set of approximately 30 to 50 attributes is then presented to consumers in conjunction with existing products and concepts. In quantitative interviews, consumers are requested to evaluate the extent to which each attribute is attributable to each product. Also elicited from the consumers is the extent to which each attribute is attributable to ideal products or to one or more other reference products in the same produce use category. During these final interviews, consumers are also requested to express a degree of preference for each product, which can be expressed as a preference for one item relative to the others, or as a degree of likelihood that the consumer would choose or purchase the item.

25 The concepts to be evaluated are generated by first eliciting from consumers in projective qualitative interviews benefits that consumers associate with existing products in the class of products to which the concepts to be tested relate. The benefits elicited are both rational and irrational. The interviews are preferably projective in that they result in the elicitation of benefits which include "characteristics" of the products as personified. The benefits elicited in the qualitative interviews are then used as a guide

SUBSTITUTE SHEET

-11-

5 in the creation of verbal and visual concepts which
represent or communicate the benefits elicited in the
qualitative interviews. Devising the concept statement,
visual image or combination thereof is the creative work
of advertising professionals and, for the purpose of
generating concepts for evaluation by the method of this
invention, is preferably based upon benefits which are
10 elicited by market researchers in the aforementioned
projective interviews.

15 The concepts generated as described above and,
preferably, additional concepts which are generated
according to known methods, are submitted to consumers
in quantitative interviews wherein the consumers
evaluate the concepts using the attributes selected
according to the method described above. This multi-
attribute evaluation is also performed in the
20 quantitative interviews with respect to existing benefit
expression for products which are in the same category
as the concepts, for example, as communicated in current
advertising. These concepts and expressions are
collectively referred to as prompts and are submitted to
25 the consumer for attribute evaluation.

Another response elicited from the interviewed
consumers, in addition to attribute evaluations, is an
30 indication of likelihood of purchasing a product
associated with the prompt. In this regard, the
consumer is asked to rate, on a scale of 1 to 100, for
example, what the likelihood is of that consumer
purchasing some product which possesses the expressed
benefits or which is represented by the concept
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-12-

presented.

5 A series of so-called data-check responses
should be elicited from the consumers during the
interviews to insure that the consumers understand the
prompts being presented to them and that the market
10 researcher properly interprets and applies the
evaluations. In open-ended, qualitative inquiries,
consumers are requested to identify their personal likes
and dislikes about the prompt, expectations of the
usefulness and quality of the prompt, the credibility of
15 the given purpose of the prompt, identification of
purposes other than the given purpose which would be
appropriate for the prompt and, generally, to
spontaneously respond to the main idea or purpose of the
prompt. These responses may indicate a misunderstanding
20 of a given prompt on the part of a consumer, which might
justify disregarding his evaluation related to that
prompt.

 The success of the market researcher in
25 creating the concepts to reflect the respective elicited
product benefits is also preferably checked by
requesting the consumers to evaluate the extent to which
the benefits, which were the basis of the created
concept, are attributable to that concept. Consistently
30 poor results may justify rejecting the created concept
as a poor representation or communication of the
benefits which the concept was designed to communicate
to the consumer.

35 An independence factor analysis of the

SUBSTITUTE SHEET

-13-

attributes is then performed, using the quantitative data obtained from the attribute evaluations, whereby clusters of related attributes are formed and identified as factors representing the constructs of consumer behavior associated with distinguishing between the products.

A squeeze analysis of the attributes and factors is then performed, wherein a point representing each product and each reference product, for a given purpose or product positioning, is then plotted on a multi-dimensional matrix based upon the attribute evaluations for each respective product and reference product. The relationships between the points representing the products are best represented by the Euclidean distance across hyperspace between these points and the point representing the reference product on the multi-dimensional matrix and by a comparison of those distances to the expressed preferences for the respective products. The reference product used is preferably a theoretical ideal product for which consumers are requested to evaluate the extent to which each attribute would ideally be possessed by that product. The reference product can also be an actual product, such as, for example, the brand most often used or purchased by consumers or the product most frequently identified as the brand currently used by the consumers.

Each factor and each attribute is rated by performing a squeeze analysis of the attributes so that the Euclidean distances between the points on the matrix representing each item and the ideal or other reference

SUBSTITUTE SHEET

-14-

item inversely correspond to the expressed preferences
for or likelihood of purchasing the respective products.
5 These attribute ratings indicate the relative
contribution of each factor and each attribute to the
consumers' choice or purchase decision.

10 The multidimensional matrix is formed by
plotting points representing each existing product and
concept, based upon the attribute evaluations associated
with them by the consumers. The number of dimensions of
the matrix is equal to the number of attributes by which
15 the products and concepts have been evaluated, which
commonly number from 30-50. In Figure 1, the positions
of points representing six products or concepts are
shown by circles containing the letters "A" through "F"
and the ideal by "ID", in two dimensional space defined
20 by the evaluations of the attributes, "convenient" and
"inexpensive," for a single consumer. Each point "A"
through "F", representing a product or concept, is
further associated with a subscript identifying its
rank, in descending order, of expressed degree of
25 preference or likelihood of purchase. The Euclidean
distances between the points representing the ideal "ID"
and each item "A" through "F," respectively, are
measured and a squeeze analysis of the attributes is
performed, iteratively according to St. James' theorem,
30 as depicted in Figure 2 for the same two attributes
shown in Figure 1. The attributes are rated so that the
points "A" through "F," which are numbered "1" through
"6" in Figure 2 to reflect their relative likelihoods of
being purchased, are realigned during the squeeze so
35 that the Euclidean distances between the ideal point and

SUBSTITUTE SHEET

4/16/2007, EAST Version: 2.1.0.14

-15-

points "1" through "6" in Figure 2, respectively, from short to long, are ranked in the same order to be proportional to the likelihoods of purchasing each respective product, from greatest to least. The use of only two attributes, or dimensions, in Figures 1 and 2 is to enable a representative portion of the multi-dimensional matrix and squeeze analysis to be depicted in a two-dimensional medium. In creating the matrix and performing the squeeze analysis, all attribute evaluations are actually utilized. The values used to rate the attributes and factors to obtain the foregoing relationship between Euclidean distances on the matrix and degrees of likelihood of purchase are recorded as importance ratings, each of which is assigned to the respective attributes and factors and reflects the relative contribution of the attribute and factor as a criterion in the consumers' purchase decision.

It is useful to analyze the data obtained from the attribute evaluations separately for market segments defined by various characteristics. It is therefore preferable to elicit from the consumers, during the interviews, demographic, attitude, opinion, product usage and other behavioral and characteristic information about each consumer which information may be used to define such market segments.

The results of the quantitative method of this invention are conveniently depicted in a factors map, created for each prompt, wherein the attributes are grouped in factors defined in the factor analysis and are ordered by their importance as criteria in the

SUBSTITUTE SHEET

-16-

5 consumer purchase decision. Factors maps may also be
created for target groups of consumers defined by
responses to various questions posed during the
interviews and designed to elicit demographic and/or
purchase behavior characteristics of the consumers. The
significant information to be derived from the factors
10 maps are the differences between each attribute
evaluation for the prompt and the mean of all attribute
evaluations for all prompts. These differences are
preferably expressed as standard deviations. The
prompts for which such differences are significant
15 deviations above that mean for factors which have the
greatest contribution, i.e., are the most important
criteria to the consumer purchase decision, are
identified as the most desirable concepts and/or
communications of benefits. This most effectively
20 identifies to the market researcher the concepts which,
when embodied in products, will most likely achieve high
trial rates and become successes in the market. This
also identifies to the market researcher the underlying
criteria of the consumers' favorable ratings of
25 concepts, expressed in terms of the same attribute
evaluations, grouped as factors, which the consumers use
in evaluating existing products and making purchase
decisions.

30 An example of a factors map is depicted in
Figure 3. The factors, and attributes within each
factor, are ordered, from left to right, in decreasing
importance as criteria in consumer preference or
purchase interest for the concept. The attributes are
35 grouped as factors and shown within columns which

SUBSTITUTE SHEET

-17-

5 represent the factors, separated by vertical dashed
lines. The contribution of each factor to purchase
intent, expressed as a percentage, is shown at the top
of each column. The attributes are identified by number
on the horizontal axis, and a scale of standard
deviations is marked on the vertical axis. The mean of
10 all attribute evaluations for all prompts is represented
by a straight horizontal line and the points
representing the attribute evaluations for each factor
for that prompt are shown as deviating above or below
that horizontal line and are connected by an irregular
15 horizontal line.

Moreover, the entire spectrum of attribute
evaluations and deviations of those evaluations, which
are derived from each factors map, reveals to the market
researcher the criteria upon which the consumer
20 evaluations of the concept are based and the importance
of each criterion to the consumer's decision to purchase
a product embodying the concept. This provides the
market researcher with the key to translating the
concept into a product and to effectively communicating
25 the benefits of that product in advertising.

It will be understood that the invention is
not limited to the preferred illustrations and
embodiments described above, but also encompasses the
30 subject matter delineated by the following claims and
all equivalents thereof.

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SUBSTITUTE SHEET

-18-

CLAIMS

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I claim:

1. A method of concept testing comprising:

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a. performing a multi-attribute evaluation of prompts comprising concepts and existing products which compete in the same consumer market;

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b. eliciting from consumers evaluations of the extent to which each attribute ideally should be possessed by a product in the same consumer market;

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c. eliciting from consumers evaluations of their likelihood of purchasing the existing products and products described by the prompts;

25

d. performing an independence factor analysis of the attributes whereby clusters of related attributes are formed and are identified as factors;

30

e. performing for each prompt a squeeze analysis of the factors whereby (i) a matrix of factors is created wherein points defining the Euclidean distances between each product and the ideal product are plotted based upon the attribute evaluations associated with each product and (ii) a rating is assigned to each factor and to each attribute so that the Euclidean distances between

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SUBSTITUTE SHEET

-19-

5 the points on the matrix representing each product and the point representing the ideal product are re-ranked into the same order as the likelihoods of purchasing each product.

2. A method of concept testing comprising:

10 a. performing a multi-attribute evaluation of prompts comprising concepts and existing products which compete in the same consumer market;

15 b. eliciting from consumers evaluations of the extent to which each attribute ideally should be possessed by a product in the same consumer market;

20 c. eliciting from consumers evaluations of their likelihood of purchasing the existing products and products described by the prompts;

25 d. performing an independence factor analysis of the attributes whereby clusters of related attributes are formed and are identified as factors;

30 e. performing for each prompt a squeeze analysis of the factors whereby (i) a matrix of factors is created wherein points defining the Euclidean distances between each product and the ideal product are plotted based upon the attribute evaluations associated with each product and (ii) a
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-20-

5 rating is assigned to each factor and to each attribute so that the Euclidean distances between the points in the matrix representing each product and the point representing the ideal product are re-ranked into the same order as the likelihoods of purchasing each product;

10 f. calculating, for each prompt, the deviation of each respective attribute evaluation for that prompt from the mean of the attribute evaluations for all prompts.

15 3. A method according to claim 1 wherein the prompts are also comprised of communications of the benefits of existing products as currently communicated to the consumers in the market.

20 4. A method according to claim 1 wherein the attributes used in the multi-attribute evaluation are comprised of rational, personality and stereotype descriptors.

25 5. A method according to claim 4 wherein the attributes used in the multi-attribute evaluations are selected from descriptors elicited from consumers on the basis of their ability to enable consumers to discriminate between products.

30 6. A method according to claim 1 wherein the attributes selected systematically provide a level of behavioral variance greater than 70%.

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SUBSTITUTE SHEET

-21-

5 7. A method according to claim 1 wherein the attributes selected provide a level of behavioral variance of about 90% or greater.

10 8. A method according to claim 5 wherein the attributes selected systematically provide a level of behavioral variance greater than 70%.

15 9. A method according to claim 5 wherein the attributes selected provide a level of behavioral variance of about 90% or greater.

20 10. A method according to claim 2 wherein the deviations of attribute evaluations for each prompt are calculated for market segments defined by characteristics identified in further consumer responses obtained during the eliciting steps.

25 11. A method according to claim 2 wherein the deviations of attribute evaluations are calculated by measuring on a factors map, for each prompt or for each purpose for each prompt, the distance between the points representing the respective attribute evaluations and the points representing mean attribute evaluations for other concepts or competitive products.

30 12. A method according to claim 1 wherein the evaluations in each concept test are further limited to concepts and products used for a given purpose.

35 13. A method for testing concepts comprising:

SUBSTITUTE SHEET

-22-

5 a. eliciting from consumers descriptors
of products including rational, personality and
stereotype descriptors;

10 b. submitting the descriptors to
consumers in qualitative interviews in order to
reduce the number of descriptors by eliminating
those which the interviews indicate are least
sufficient as bases for the consumers to
distinguish between the products;

15 c. eliciting from consumers quantitative
evaluations of the extent to which the non-
eliminated descriptors are attributable to the
products;

20 d. calculating a discrimination index of
the evaluated descriptors whereby the least number
of descriptors, which provide the most
discrimination between items and which account for
the greatest amount of behavioral variance over 70%
25 among the interviewed consumers, are identified as
attributes;

30 e. eliciting from consumers in
projective qualitative interviews benefits that
communicate positive characteristics which
consumers associate with similarly positioned
products;

35 f. creating concepts which represent the
elicited benefits;

-23-

5 g. eliciting from consumers evaluations
of the extent to which the attributes are
attributable to the existing products similarly
positioned in the market;

10 h. eliciting from consumers evaluations
of the extent to which each attribute ideally
should be possessed by a product similarly
positioned in the market;

15 i. eliciting from consumers evaluations
of their likelihood of purchasing the products;

20 j. exposing to consumers a set of
prompts comprising (i) concepts representing the
benefits that consumers associated with the
products in step e, (ii) other given concepts
describing potential benefits of the products and
(iii) existing expressions of benefits of currently
available products;

25 k. eliciting from consumers evaluations
of the extent to which each attribute is
attributable to a product described by each prompt;

30 l. eliciting from consumers evaluations
of the likelihood of purchasing a product described
by each prompt;

35 m. performing an independence factor
analysis of the attributes whereby clusters of
related attributes are formed and are identified as

-24-

factors;

5 n. performing for each prompt a squeeze
analysis of the factors whereby (i) a matrix of
factors is created wherein points defining the
Euclidean distances between each product and the
10 ideal product are plotted based upon the attribute
evaluations associated with each product and (ii) a
rank is assigned to each factor and to each
attribute so that the Euclidean distances between
the points on the matrix representing each product
and the point representing the ideal product are
15 re-ranked into the same order as the likelihoods of
purchasing each product;

14. A method according to claim 13 wherein
20 the attributes selected provide a level of behavioral
variance of about 90% or greater.

15. A method for testing concepts comprising:

25 a. eliciting from consumers descriptors
of products including rational, personality and
stereotype descriptors;

30 b. submitting the descriptors to
consumers in qualitative interviews in order to
reduce the number of descriptors by eliminating
those which the interviews indicate are least
sufficient as bases for the consumers to
distinguish between the products;

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SUBSTITUTE SHEET

-25-

5 c. eliciting from consumers quantitative evaluations of the extent to which the non-eliminated descriptors are attributable to the products;

10 d. calculating a discrimination index of the evaluated descriptors whereby the least number of descriptors, which provide the most discrimination between items and which systematically account for the greatest amount of behavioral variance over 70% among the interviewed consumers, are identified as attributes;

15 e. eliciting from consumers in projective qualitative interviews benefits that communicate positive characteristics which consumers associate with similarly positioned products;

20 f. creating concepts which represent the elicited benefits;

25 g. eliciting from consumers evaluations of the extent to which the attributes are attributable to the existing products similarly positioned in the market;

30 h. eliciting from consumers evaluations of the extent to which each attribute ideally should be possessed by a product similarly positioned in the market;

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-26-

5 i. eliciting from consumers evaluations
of their likelihood of purchasing the products;

10 j. exposing to consumers a set of
prompts comprising (i) concepts representing the
benefits that consumers associated with the
products in step e, (ii) other given concepts
describing potential benefits of the products and
(iii) existing expressions of benefits of currently
available products;

15 k. eliciting from consumers evaluations
of the extent to which prompts are associated with
existing products;

20 l. eliciting from consumers evaluations
of the extent to which each attribute is
attributable to a product described by each prompt;

25 m. eliciting from consumers evaluations
of the likelihood of purchasing a product described
by each prompt;

30 n. performing an independence factor
analysis of the attributes whereby clusters of
related attributes are formed and are identified as
factors representing constructs of consumer
behavior associated with distinguishing between
products;

35 o. performing for each prompt a squeeze
analysis of the factors whereby (i) a matrix of

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-27-

5 factors is created wherein points defining the
Euclidean distances between each product and the
ideal product are plotted based upon the attribute
evaluations associated with each product and (ii) a
rank is assigned to each factor and to each
attribute so that the Euclidean distances between
10 the points on the matrix representing each product
and the point representing the ideal product are
re-ranked into the same order as the likelihoods of
purchasing each product;

15 p. calculating for each prompt the
deviation of each attribute evaluation for that
prompt, from the mean of the attribute evaluations
for all prompts, for groups of consumers defined by
characteristics identified in further responses
20 obtained during the eliciting steps.

25 16. A method according to claim 15 wherein
the attributes selected provide a level of behavioral
variance of about 90% or greater.

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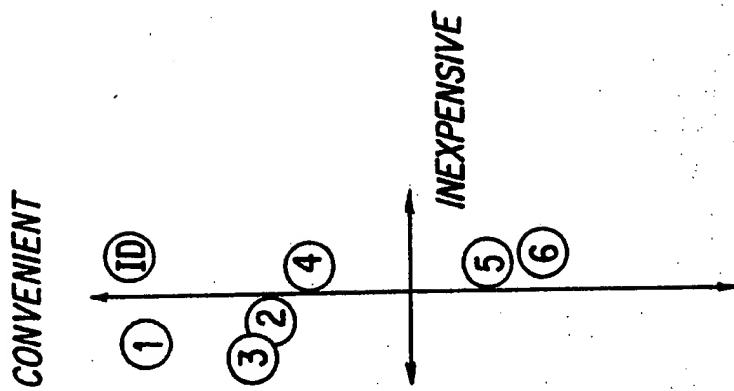


FIG. 2

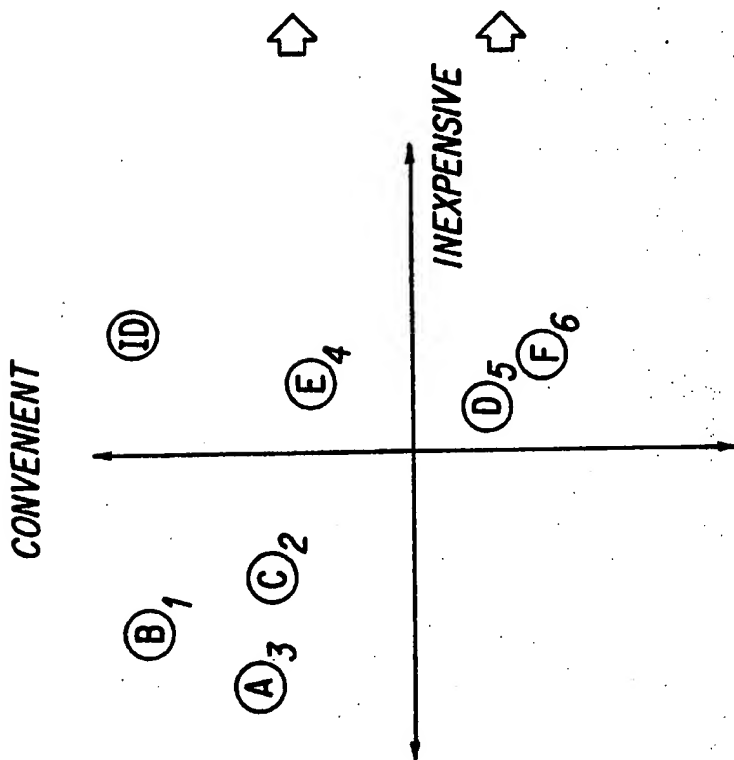


FIG. 1

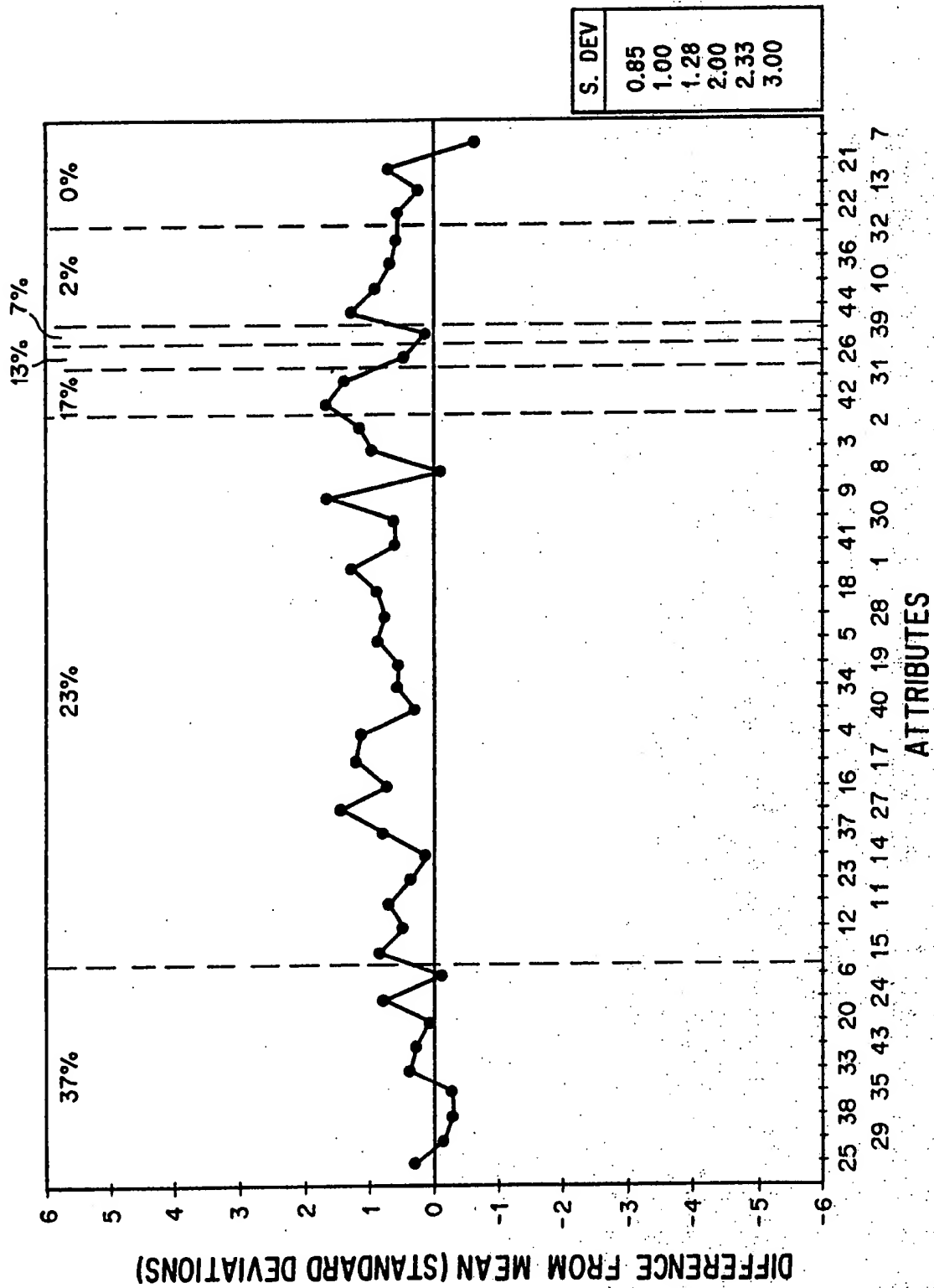


FIG. 3

INTERNATIONAL SEARCH REPORT

International Application No. PCT/US89/04287

I. CLASSIFICATION OF SUBJECT MATTER (if several classification symbols apply, indicate all) ⁶ According to International Patent Classification (IPC) or to both National Classification and IPC IPC(4): G06F 15/21, 15/36 U.S. Cl.: 364/401, 419																				
II. FIELDS SEARCHED <div style="text-align: right; font-size: small;">Minimum Documentation Searched ⁷</div> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%; padding: 5px;">Classification System</td> <td style="padding: 5px;">Classification Symbols</td> </tr> <tr> <td style="padding: 5px;">U.S. Cl.</td> <td style="padding: 5px;">364/225, 401, 419</td> </tr> </table> <div style="text-align: center; font-size: x-small; margin-top: 5px;">Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in the Fields Searched ⁸</div>			Classification System	Classification Symbols	U.S. Cl.	364/225, 401, 419														
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III. DOCUMENTS CONSIDERED TO BE RELEVANT ⁹ <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 10%; padding: 5px;">Category [*]</th> <th style="width: 60%; padding: 5px;">Citation of Document, ¹¹ with indication, where appropriate, of the relevant passages ¹²</th> <th style="width: 30%; padding: 5px;">Relevant to Claim No. ¹³</th> </tr> <tr> <td style="text-align: center; vertical-align: top; padding: 5px;">A</td> <td style="padding: 5px;">W. Dillon and M. Goldstein, "Multivariate Analysis", published 1984, by John Wiley and Sons, see pages 107 to 153.</td> <td></td> </tr> <tr> <td style="text-align: center; vertical-align: top; padding: 5px;">A</td> <td style="padding: 5px;">ADMAP, issued 1983, November, P. Sampson, "BASES: A Way Ahead for New Product Development", see pages 594 to 600.</td> <td></td> </tr> <tr> <td style="text-align: center; vertical-align: top; padding: 5px;">A</td> <td style="padding: 5px;">Journal of Marketing Research, Volume 20, issued 1983, August, G. Urban and G. Katz, "Pre-Test-Market Models: Validation and Managerial Implications", see pages 221 to 234.</td> <td></td> </tr> <tr> <td style="text-align: center; vertical-align: top; padding: 5px;">A</td> <td style="padding: 5px;">Journal of Business Research, Volume 10, issued 1982, W. Moore, "Concept Testing", see pages 279 to 294.</td> <td></td> </tr> <tr> <td style="text-align: center; vertical-align: top; padding: 5px;">A</td> <td style="padding: 5px;">Journal of Marketing, Volume 45, issued 1981, P. Green, J. Carroll and S. Goldberg, "A General Approach to Product Design Optimization Via Conjoint Analysis", see pages 17 to 37.</td> <td></td> </tr> </table>			Category [*]	Citation of Document, ¹¹ with indication, where appropriate, of the relevant passages ¹²	Relevant to Claim No. ¹³	A	W. Dillon and M. Goldstein, "Multivariate Analysis", published 1984, by John Wiley and Sons, see pages 107 to 153.		A	ADMAP, issued 1983, November, P. Sampson, "BASES: A Way Ahead for New Product Development", see pages 594 to 600.		A	Journal of Marketing Research, Volume 20, issued 1983, August, G. Urban and G. Katz, "Pre-Test-Market Models: Validation and Managerial Implications", see pages 221 to 234.		A	Journal of Business Research, Volume 10, issued 1982, W. Moore, "Concept Testing", see pages 279 to 294.		A	Journal of Marketing, Volume 45, issued 1981, P. Green, J. Carroll and S. Goldberg, "A General Approach to Product Design Optimization Via Conjoint Analysis", see pages 17 to 37.	
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<div style="display: flex; justify-content: space-between; font-size: x-small;"> <div style="width: 45%;"> <p>[*] Special categories of cited documents: ¹⁰</p> <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier document but published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p> </div> <div style="width: 45%;"> <p>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step</p> <p>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.</p> <p>"&" document member of the same patent family</p> </div> </div>																				
IV. CERTIFICATION <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; padding: 5px;"> Date of the Actual Completion of the International Search 19 December 1989 International Searching Authority ISA/US </td> <td style="width: 50%; padding: 5px;"> Date of Mailing of this International Search Report <div style="font-size: large; font-weight: bold;">11 JAN 1990</div> Signature of Authorized Officer Stephen M. Baker </td> </tr> </table>			Date of the Actual Completion of the International Search 19 December 1989 International Searching Authority ISA/US	Date of Mailing of this International Search Report <div style="font-size: large; font-weight: bold;">11 JAN 1990</div> Signature of Authorized Officer Stephen M. Baker																
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III. DOCUMENTS CONSIDERED TO BE RELEVANT (CONTINUED FROM THE SECOND SHEET)		
Category *	Citation of Document, with indication where appropriate, of the relevant passages	Relevant to Claim No
A	Journal of Marketing Research, Volume 16, issued 1979, May, A. Shocker and V. Srinivasan, "Multiattribute Approaches for Product Concept Evaluation and Generation: A Critical Review", see pages 159 to 180.	
A	Journal of Consumer Research, Volume 5, issued 1979, March, J. Hauser and G. Urban, "Assessment of Attribute Importances and Consumer Utility Functions: von Neumann-Morganstern Theory Applied to Consumer Behavior", see pages 251 to 262.	
A	Journal of Marketing Research, Volume 15, issued 1978, May, A. Silk and G. Urban, "Pre-Test-Market Evaluation of New Packaged Goods: A Model and Measurement Methodology", see pages 171 to 191.	
A	Operations Research, Volume 25, no. 4, issued 1977, July, J. Hauser and G. Urban, "A Normative Methodology for Modeling Consumer Response to Innovation", see pages 579 to 619.	
A	J. Meyers and E. Tauber, "Market Structure Analysis", published 1977, by the American Marketing Association, see pages 90 to 137.	
A	Management Science, Volume 21, no. 8, issued 1975, April, G. Urban, "PERCEPTOR: A Model for Product Positioning", see pages 858 to 871.	